

Work Order ID 75627

\*75627\*

Page 1

October-27-11 11:34:05 AM

Item ID: D6009-129

Accept

\*N9000040100\*

Setup Start \*NS1\*

Revision ID:

Item Name: Crosstube Material

Stop \*NS2\*

Start Date: 27/10/2011 Start Qty: 20.00

\*20\*

Cust Item ID:

Required Date: 30/01/2013 Req'd Qty: 20.00

\*20\*

Customer:

Reference:

Approvals:

Process Plan: M.C.5

Date: 11/10/27

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start \*NR1\*

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D6009

Rev A

100

0.00

\*100\*

PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: 15344

a) Order as per Dwg D6009

b) Material: 3.500 x 0.625 wall 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube

c) Minimum ultimate tensile strength = 77 ksi

d) Minimum tensile yield strength = 66 ksi

e) Tolerance are per ASTM B210 (see details on Dwg D6009)

f) Material certification required

CX 11/11/03 20

110

Receive & Inspect for Damage & Mat'l Certs

0.00

\*110\*

Packaging

Memo

0.00

Packaging

Ensure material certification is attached

11/14/29 (23)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Work Order ID 75627

\*75627\*

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@October-27-11 11:34:05 AM

Item ID: D6009-129 Accept \*N9000040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Cross tube Material  
 Start Date: 09/10/2011 Start Qty: 20.00 \*20\* Cust Item ID:  
 Required Date: 30/01/2013 Req'd Qty: 20.00 \*20\* Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC6- Inspect dimensions to drawing	0.00							
*120*		0.00							
QC	Memo								
Quality Control	Ensure Material certification comply to Dwg D6009								
140	Identify as per dwg & Stock Location: <u>L/C</u>	0.00							
*140*		0.00							
Packaging	Memo								
Packaging									
150	QC21- Final Inspection - Work Order Release	0.00							
*150*		0.00							
QC	Memo								
Quality Control									

DAS  
16  
0.00

12/10/31

see Attach Dir Sheet.

703

1/6

anm.L  
12/10/31

12/11/20

12/11/01

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

October-27-11 11:34:10 AM

Page 1

Work Order ID: 75627

\*75627\*

Parent Item: D6009-129

\*D6009-129\*

Parent Item Name: Crosstube Material

Start Date: 27/10/2011

Required Date: 30/01/2013

Start Qty: 20.00

Required Qty: 20.00

## Comments:

IPP Rev:A01.08.17New IssueSM  
alodine DD 10.01.09 verified by:JLM

IPP Rev:B remove

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6009-129P		Purchased	No			110	Each	0.0000	1	20			
*D6009-129P*									**				
Crosstube Material													

42/128 (22)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

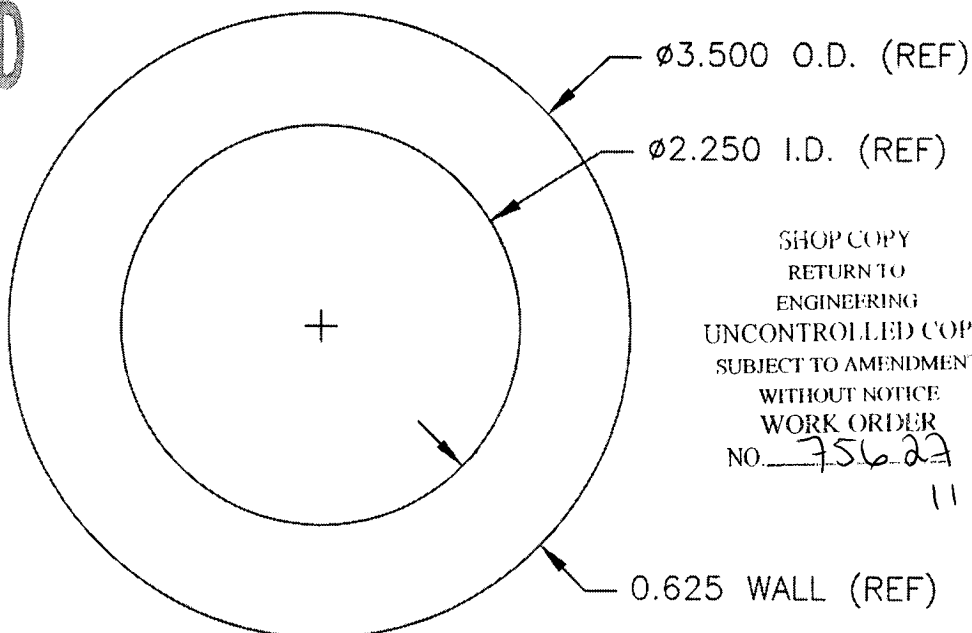
**NOTE:** Date & initial all entries



DESIGN #	DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D6009	REV. A SHEET 1 OF 1
DATE 01.08.16		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	01.08.16	NEW ISSUE	

## SPECIFICATION CONTROL DRAWING

RELEASED  
01.08.17



SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER

NO. 75627 M.L.J  
11/10/27

### NOTES

- 1) D6009-XXX CROSSTUBE  
LENGTH

WHERE XXX IS LENGTH IN INCHES  
EG. 129" LONG TUBE: D6009-129

- 2) MATERIAL: 3.500 OD x 0.625 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.  
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi  
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:  
O.D.:  $\pm 0.008$  MEAN ( $\pm 0.016$  INCLUDING OVALITY)  
WALL:  $\pm 0.020$  MEAN ( $\pm 0.063$  INCLUDING ECCENTRICITY)  
LENGTH: XXX +0.188/-0.000  
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries





# Abnahmeprüfzeugnis 3.1- DIN EN 10204:2005

Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

**Kunde:**

Dart Aerospace Ltd.

Client:

1270 Aberdeen Street  
K6A1K7 Hawkesbury, ON Canada

**Zeugnisnummer:**

1283/12

Cert No.: / No. du certificat:

PO 15344

**Bestellnummer:**

Order No. / No. de commande

**Auftrag:**

44987/200

Our Reference/Notre Reference:

**Produkt:**

Product / Produit:

Rohre nahtlos gepresst

Tubes seamless extruded

**Spezifikation:**

Specification:

AMS - QQ - A - 200/11; Spezifikation Dart Aerospace D6009

**Werkstoff:**

Alloy/Alliage:

7075

**Zustand:**

Temper/Etat

T 6511

**Abmessung**

Size / Dimension

3,500 INCH x 2,250 INCH x 0,625 INCH x 129,000 INCH

D6009-129 3.500 X 0.625 X 129

**Kennzeichnung**

Marking/Marquage:

ALUnna - CERT NO. 1283/12 - 7075 - T6511 - CAST NO. 84319 - AMS - QQ - A - 200/11 - 3.500" OD x 0.625"

WALL - HEAT LOT NO. 1401367 - ALUNNA ORDER CONF.NO. 44987/200-1 - PO 15344

**Lieferung**

Delivered Material / Matériel délivré:

pcs.

lbs

Country of Manufacture: Germany

23

1717

Products are in accordance with applicable RoHS

Elemente ohne Grenzwerte:

einzel max. 0,05 %, insgesamt 0,15 %

## 1. Chemische Analyse

Chemical Analysis / analyse chimique

Charge/ min.  
Cast No. max.

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
		1,2		2,1	0,18	5,1						
0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
84319	0,08	0,13	1,52	0,04	2,46	0,18	5,83	0,03	0,01	0,04		0,0001

Hydrogen content: 0,10

ccm/100 g Al Elements without indication < 0,01 %

country of melt manufacturer: Germany

## 2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat Lot No.
min. max.	77,0	66,0	7,0			
1	87,435	80,330	11,0			1401367
2	86,565	79,315	12,0			

RMS: outside 25 - max. 21,0 µ"

**Ergebnis der  
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Resultats:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

TaschkeD



Certified acc. DIN EN ISO 9001:2008 and DIN EN 9100:2003  
valid until 2013-11-10

Cert.- Reg. No.: 001959 QM08; 001959 ASH



ALUnna

Abnahmebeauftragter

18.09.2012

Aluminiumwerk Unna AG, Uelzener Weg 36, 59425 Unna, Germany

# EXTRUSION INSPECTION SHEET

								ULTRA SONIC MEASUREMENTS				
		SIDE A	SIDE B									
TUBE #	TOTAL LENGTH	DIA two readings	DIA two readings	INSIDE DIA	wall thickness measured w/vern	Strightness at middle	Rockwell Reading	LOCATION on tube	R1	R2	R3	R4
DWG	129.00"	3.500"		2.250"	0.625"	0.010"	N/A	Middle	N/A			
1	129.00"	3.503"/3.499"	3.506"/3.494"	2.230"	0.638"/0.628"	0.002"	N/A	Middle	0.638"	0.648"	0.639"	0.629"
2	129.00"	3.503"/3.501"	3.505"/3.503"	2.236"	0.647"/0.625"	0.001"	N/A	Middle	0.640"	0.633"	0.637"	0.643"
3	129.00"	3.498"/3.494"	3.497"/3.493"	2.234"	0.636"/0.628"	0.002"	N/A	Middle	0.629"	0.629"	0.645"	0.640"
4	129.00"	3.495"/3.501"	3.501"/3.506"	2.235"	0.629"/0.634"	0.002"	N/A	Middle	0.631"	0.627"	0.642"	0.636"
5	129.00"	3.439"/3.500"	3.495"/3.500"	2.237"	0.625"/0.637"	0.002"	N/A	Middle	0.639"	0.631"	0.636"	0.639"
6	129.00"	3.488"/3.495"	3.498"/3.501"	2.222"	0.622"/0.641"	0.003"	N/A	Middle	0.645"	0.633"	0.634"	0.650"
7	129.00"	3.488"/3.494"	3.494"/3.498"	2.230"	0.628"/0.639"	0.005"	N/A	Middle	0.629"	0.629"	0.637"	0.644"
8	129.00"	3.494"/3.501"	3.499"/3.501"	2.234"	0.626"/0.637"	0.001"	N/A	Middle	0.637"	0.642"	0.638"	0.636"
9	129.00"	3.496"/3.497"	3.499"/3.506"	2.228"	0.617"/0.666"	0.006"	N/A	Middle	0.627"	0.640"	0.653"	0.636"
10	129.00"	3.494"/3.497"	3.497"/3.501"	2.232"	0.625"/0.634"	0.001"	N/A	Middle	0.636"	0.634"	0.642"	.0641"
11						0.003"	N/A	Middle				
12						0.008"	N/A	Middle				
13						0.003"	N/A	Middle				
14						0.001"	N/A	Middle				
15						0.001"	N/A	Middle				
16						0.003"	N/A	Middle				

17					0.001"	N/A	Middle				
18					0.002"	N/A	Middle				
19					0.002"	N/A	Middle				
20					0.003"	N/A	Middle				
21					0.002"	N/A	Middle				
22					0.001"	N/A	Middle				
23					0.002"	N/A	Middle				
PART # D6009-129		P/O# 15344			BATCH # 75627			Notes:			